

ABSTRACT OF THE DISCLOSURE

5 A multi-wavelength laser array where each element can  
be individually heated for fine tuning. The wavelength of  
the array can be coarsely tuned by selecting one laser of a  
particular wavelength for the array, and then applying a  
heating current to fine-tune the wavelength. The lasers  
10 can be phase shifted DFBs for high single-mode yield. The  
heating can be performed monolithic to the device by  
passing current longitudinally through the p-type stripe,  
while the injection current passes vertically through the  
stripe. Alternatively an adjacent laser to the one  
15 selected can be activated, though not fiber coupled, such  
that the thermal load is sufficient to tune the selected  
laser. Thin film heaters placed on top or adjacent to the  
cavity can also be used. To minimize continuous power  
20 consumption, the on-chip heater can be used initially to  
tune the laser while the TE cooler responds on a slower  
time scale.

25

30

35